REMARKS

Reconsideration of the present application, as amended, is respectfully requested.

I. STATUS OF THE CLAIMS

Claims 1-24 are pending in this application. Claims 1 and 19 have been amended to further clarify that the insulating region inside the second well having a first-type diffusion region along with the first-type diffusion region of the first well constitute a bipolar junction transistor which operates in a cut-off mode and cuts off current from flowing from the first well to the third well.

Support for the above amendments may be found throughout the specification as originally filed. No new matter has been added by virtue of this amendment.

II. Claim Rejections under 35 U.S.C. §102 and 35 U.S.C. § 103(a)

(i) Claims 1-10, 12-17 and 19-24 have been rejected under 35 U.S.C. §102(e) as being anticipated by or, in the alternative, under 35 U.S.C. §103(a) as obvious over U.S. Patent No. 5,576,557 to Ker et al. ("the Ker patent").

In order for a claim to be rendered unpatentable by the cited art, the cited art must either (i) anticipate the claim or otherwise (ii) render the claim obvious. A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference. **(See MPEP 2133, Verdegaal Bros. v. Union Oil Co. of California, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987).** Alternatively, to establish prima facie obviousness of a claimed invention, all of the claim limitations must be taught or suggested by the cited reference or references. **(See MPEP 2143.03; In re Royka, 490 F.2d 981, 180 USPQ 580 (CCPA 1974)).**

However, Ker fails to teach or suggest all of the features of the presently claimed invention as recited in claims 1,12 or 19.

In particular, Ker at the very least fails to teach or suggest a semiconductor device or a method of forming a semiconductor device wherein an insulating region inside a second well having a first-type diffusion region along with a first-type diffusion region of a first well constitute a bipolar junction transistor which operates in a cut-off mode and cuts off current from flowing from the first well to a third well, as recited in claims 1 and 19. An illustration of the above-mentioned bipolar junction transistor (BJT) and cut-off mode which are within the scope of claims 1 and 19 are set forth, for example, in an exemplary embodiment **on pages 8-10 and Fig. 3** of the present specification. In the above exemplary embodiment of the present invention, N+ diffusion region 340 and N+ diffusion region 320 constitute a BJT. However, Ker does not disclose that its N+ region with Rw3 and N+ region with Rw2 constitute a BJT. Furthermore, in the device of Ker, between the N+ region with Rw3 and the N+ region with Rw2, some elements for forming a BJT are omitted. (Compare Fig. 2 of Ker with Fig. 3 of the present specification). Therefore, in Ker, the N+ region with Rw3 and the N+ region with Rw2 cannot constitute a BJT as required by claims 1 and 19.

Also, among the BJT's operating modes, the BJT recited in claims 1 and 19 operates in a cut-off mode. **(See, for example, exemplary embodiment on pages 10, lines 7-14 and Fig. 3** of the present specification). However, Ker is completely silent regarding a BJT that operates in a cut-off mode.

Therefore, for at least the reasons set forth above, withdrawal of the rejections to claims 1 and 19 is respectfully requested. As claims 6-11 depend from and incorporate all of the limitations of claim 1 and claims 20-24 depend from and incorporate all of the limitations of claim 19, withdrawal of the rejection to these dependent claims is likewise respectfully requested.

Next with regard to claim 12, Ker at the very least fails to teach or suggest a semiconductor device wherein the insulating region is a sub-N-well embedded within

said first P-well and having an N-type diffusion region that receives an off mode control voltage for preventing a latch-up current. As discussed above, Ker fails to teach or suggest a semiconductor device having a BJT which operates in a cut-off mode. Therefore, as a result Ker must likewise also fail to teach or suggest insulating region that receives an off mode control voltage for preventing a latch-up current, as essentially recited in claim 12.

For at least the reasons set forth above, withdrawal of the above rejections to claim 12 is requested. As claims 13-18 depend from and incorporate all of the limitations of claim 12, withdrawal of the rejection to these dependent claims is likewise requested.

ADDITIONAL ARGUMENTS FOR DISTINGUSHING CLAIMS 1, 12 AND 19 OVER THE KER REFERENCE

In addition to the reasons discussed above, claims 1, 12 and 19 are even further distinguished from the Ker reference for at least the reasons set forth below. For instance, Ker also at the very least fails to teach or suggest a semiconductor device or a method of forming a semiconductor device which includes a second well having an insulating region having a first-type diffusion region inside the second well, as essentially recited in claims 1 and 19.

In particular, at the very least, element 22 of Ker is not (i) located inside a second well nor (ii) is it an insulating region as required by claims 1 and 19.

First, it is respectfully submitted that the Examiner's statement in the instant Office Action that element 22 of Ker is located inside a second well is wholly erroneous. **(See the middle of page 3 of the instant Office Action).** In contrast, element 22 of Ker is not located inside a second well as required by claims 1 and 19. Rather, element 22 of Ker is simply an N-well located in the p-substrate or n-substrate only, but it is not located inside a well, as required by claims 1 and 19. **(See Figs. 2 and 5 of Ker).** The Examiner appears to base his reasoning that element 22 is located inside a second well on the

premise that the term p-substrate may also be interpreted as a well. **(See the bottom of page 3 and the top of page 4 of the instant Office Action)**. However, at the very least, the above interpretation by the Examiner is contrary to the teachings of the Ker reference and therefore also an impermissible interpretation under the United States patent laws as will be further explained below.

It is well known pursuant to the United States patent laws, that during the patent examination process, where an explicit definition is provided by the applicant for a term, that definition will control interpretation of that term. **(See In re Zletz, 893 F.2d 319, 321, 13 USPQ2d 1320, 1322 (Fed. Cir. 1989) and MPEP 2111.01)**. Here, the Ker patent has clearly defined the terms well regions and p-substrate as being separate elements/not the same as one another, as will be explained in further detail below. Accordingly, the definitions for the terms well regions and substrate as set forth in Ker are controlling and not the interpretation set forth by the Examiner in the instant Office Action.

For instance, according to the teachings of the Ker reference, the terms p-substrate and well regions do not mean the same thing. Rather, Ker clearly defines its wells regions as being well regions 21, 22, 23 and 24 and clearly defines its substrate to be a separate element from well regions 21-24, labeled by reference numeral 20, i.e. p-substrate or n-substrate 20. **(See Col. 7, lines 60-67, Col. 8, lines 1-11 and Figs. 2 and 5 of Ker).** The terms well region and substrate are thus clearly not used interchangeably in Ker and do not have the same meaning in this reference. Accordingly, the Examiner may not expand or modify the clear definition provided for the terms wells and substrate in the Ker reference. Therefore, as the p-substrate 20 and well regions 21, 22, 23 and 24 are not the same element in Ker, Ker consequently fails to teach or suggest element 22 being disposed inside a well, as required by claims 1 and 19.

Moreover, besides element 22 of Ker not being located inside a second well, element 22 is also not even an insulating region having a first-type diffusion region, as recited in claims 1 and 19. Rather, element 22 as taught by Ker is simply an N-well

formed in a p-substrate. An illustration of the above-mentioned insulating region (BR), which is within the scope of claims 1 and 19 is set forth, for example, in an exemplary embodiment **on page 10, lines 7-14 of the present specification and Fig. 3.** One skilled in the art would readily understand that the N-well (element 22) formed in a substrate as taught by Ker is clearly not the same element as the insulating region having a first-type diffusion region formed inside the second well as essentially recited in claims 1 and 19.

Therefore, Ker at the very least fails to teach or suggest a semiconductor device including a second well having an insulating region having a first-type diffusion region inside the second well, as essentially recited in claims 1 and 19. Thus, for at least the reasons set forth above, withdrawal of the above rejections to claims 1 and 19 is respectfully requested. As claims 6-11 depend from and incorporate all of the limitations of claim 1 and claims 20-24 depend from and incorporate all of the limitations of claim 19, withdrawal of the rejection to these dependent claims is likewise respectfully requested.

Besides the reasons mentioned above, claims 2-5 and 20-22 are even further distinguishable over the Ker patent. In particular, Ker also at the very least fails to teach or suggest a semiconductor device or a method of forming a semiconductor device which includes a second well which includes a first sub-well, a second sub-well and a third sub-well, wherein the insulating region is a third sub-well having a first-type diffusion region, as essentially recited in claims 2-5 and 20-22. An illustration of the above-mentioned second well (W2) with accompanying sub-wells (SW1, SW2, SW3) therein, which is within the scope of claims 2-5 and 20-22 is set forth, for example, in an exemplary embodiment **on page 10, lines 7-14 of the present specification and Fig. 3.** As discussed above, the only well regions described in Ker are well regions 21, 22, 23 and 24. **(See above discussion).** However, none of these wells 21, 22, 23 and/or 24 of Ker include any sub-wells formed therein. Rather, in Ker, the wells 21-24 each include only at least one diffusion region and a parasitic resistor. Therefore, Ker at the very least fails to teach or suggest a semiconductor device or a method of forming a semiconductor device which includes a second well which includes a first sub-well, a second sub-well

and a third sub-well, wherein the insulating region is a third sub-well having a first-type diffusion region, as essentially recited in claims 2-5 and 20-22.

Furthermore, Ker also at the very least fails to teach or suggest a semiconductor device, wherein the insulating region is a sub-N-well embedded within a first P-well as essentially recited in claim 12 for similar reasons as discussed above with regard to claims 1 and 19. As discussed above, Ker fails to teach that any of its wells 21, 22, 23 and/or 24 have a sub-well inside or embedded therein. Rather, in Ker, the wells each include only at least one diffusion region and a parasitic resistor. Therefore, Ker at the very least fails to teach or suggest a semiconductor device, wherein the insulating region is a sub-N-well embedded within a first P-well as essentially recited in claim 12

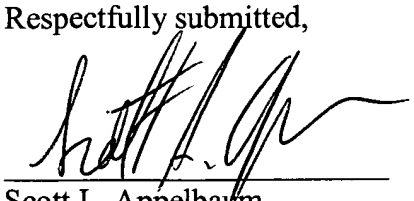
For at least the reasons set forth above, withdrawal of the above rejections to claim 12 is requested. As claims 13-18 depend from and incorporate all of the limitations of claim 12, withdrawal of the rejection to these dependent claims is likewise requested.

III. CONCLUSION

For the foregoing reasons, applicants respectfully submit that the instant application is in condition for allowance. Early notice to that end is earnestly solicited.

If a telephone conference would be of assistance in furthering prosecution of the subject application, applicants request that the undersigned be contacted at the number below.

Respectfully submitted,



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